

can only hope that the favourable presage will be realised. The probable limit of error is based upon a preliminary inquiry due to M. Hermann Struve, of Königsberg, who has found that the probable error of a single complete micrometrical measurement is  $\pm 0''.077$ , and such an error would introduce no greater uncertainty into the parallax than  $0''.03$ , a most satisfactory result for one night's determination. Such a favourable result, however, implies (1) that we are in possession of the accurate diurnal motion of the planet; (2) that no error exists in the relative position of the stars of comparison, and (3) that every source of systematic error has been eliminated. It is not unimportant to observe in this connection that the motion of the planet itself in one second of time can amount to, and even exceed,  $0''.03$  in the arc of a great circle, no inconsiderable fraction of the total error found by M. Struve. The actual epoch of exposure, with a rapidly moving shutter, would probably be known to much less than a second of time, but the proper moment to assign to the formation of the image seems to be open to more doubt. A question of very similar import has been discussed at Paris by M. Henry, and has been reported upon. This has reference to the formation of the trace of the planet on the sensitised film, when the equatorial is driven to sidereal time by means of a star. M. Henry photographed a region of the sky with an exposure of three minutes, in which an acceleration and retardation of three seconds was alternately given to the driving clock. Two other exposures were made on the same plate in the reversed order, and the differences of right ascension of the centres of the traces were measured. The mean of the differences of the measured distance with clock accelerating was compared with the mean of the distances clock retarding, in groups according to magnitude, with the following result:—

Number of stars.	Mean magnitude.	Mean diff. of distance.	Prob. error of the mean.	Prob. error of a distance.
13	9.3	$+0''.10$	$\pm 0''.02$	$\pm 0''.06$
20	11.3	$-0''.03$	$\pm 0''.02$	$\pm 0''.09$
25	12+	$-0''.02$	$\pm 0''.03$	$\pm 0''.13$

The large probable error in the third group is quite sufficiently explained by the faintness of the stars and the shortness of the exposure, but we seem to be in presence of errors of quite the same order of magnitude as those found by M. Struve. Certainly one of the most interesting of the results that will proceed from this elaborate programme will be the relative certainty and freedom from systematic errors of the various methods of observing.

This memoir or report also contains, besides an ephemeris of the planet supplied by M. Millosevich and a table of star constants applicable to the stars used in the discussion of the photographic plates, a memoir by Mr. Comstock on the computation of refraction in the direction of the diurnal motion of the planet. Other points which have been discussed are crowded out of the present number, but enough is given to assure us that the International Committee forms a centre of activity calculated to attract the energy and the enterprise of all the co-operating astronomers. But it is impossible to anticipate, as the result of so much labour, anything more than an academic interest. Based upon the constants employed in the reduction and an assumed figure of the earth, the resulting parallax will represent the best value procurable from an isolated inquiry; but in view of the solemn acceptance of the value  $8''.80$  for the solar parallax at the Paris Congress in 1896, it seems extremely improbable that the various national ephemerides will make any alteration in a value which has been so recently introduced.

#### FORTHCOMING BOOKS OF SCIENCE.

Mr. Edward Arnold announces:—"The Physiological Action of Drugs, an Introduction to Practical Pharmacology," by Dr. M. S. Pembrey and Dr. C. D. F. Phillips; "The Morphology of the Brain: an Introduction to the Study of the Comparative Anatomy of the Brain in the Vertebrata," by G. Elliott Smith; "A Text-book of Biology," by G. P. Mudge; "Applied Embryology and Morphology," by Dr. A. Keith; "Anthropology and its Practical Value," by E. W. Brabrook; "A School Botany: being an Introductory Text-book on the Study of Flowering Plants," by David Houston, illustrated; "Wood: a Manual of the Natural History and Industrial Applications of the Timbers of Commerce," by Prof. G. S. Boulger; "A Hand-

book on Fermentation and the Fermentation Industries," by Charles G. Matthews; "The Dressing of Minerals," by Prof. Henry Louis; "Traverse Tables for Surveyors and Engineers," by Prof. Henry Louis and G. W. Caunt; "Physical Calculus," by Rev. P. E. Bateman.

The announcements of Messrs. Baillière, Tindall and Cox include:—"Cerebral Science: Studies in Comparative Psychology," by Dr. Wallace Wood, illustrated; "Gold and Diamonds: South African Facts and Inferences," with coloured maps and thirteen plates, by W. H. Penning; "Suggested Standards of Purity for Foods and Drugs," by C. G. Moor, Cecil H. Cribb, and Martin Priest.

Mr. B. T. Batsford promises:—"Sanitary Engineering," by Colonel E. C. S. Moore, illustrated; and a new edition of "New Tables for the Complete Solution of Ganguillet and Kutter's Formula," by Colonel E. C. S. Moore.

Messrs. A. and C. Black will publish:—"Encyclopædia Biblica," edited by Rev. Prof. Cheyne and Dr. J. Sutherland Black, vol. iii.; "Geography of South America," by L. W. Lyde; "World Pictures and Problems, an Elementary Pictorial Geography," by Joan B. Reynolds, illustrated; "New Descriptive Geography of Africa," edited by Dr. A. J. Herbertson and F. D. Herbertson; "Introduction to the Study of Physics," by A. F. Walden and J. J. Manley, vol. i., General Physical Measurements, illustrated; "A Treatise on Elementary Statics," by W. J. Dobbs.

The announcements of the Cambridge University Press include:—"Scientific Papers," by John William Strutt, Baron Rayleigh, F.R.S., vol. iii.; "Papers on Mechanical and Physical Subjects," by Prof. Osborne Reynolds, F.R.S., reprinted from various transactions and journals, vol. ii.; "Scientific Papers," by the late Dr. John Hopkinson, F.R.S., in 2 vols.; "A Treatise on Determinants," by R. F. Scott, a new edition by G. B. Mathews, F.R.S.; "A Treatise on Spherical Astronomy," by Prof. Sir Robert S. Ball, F.R.S.; "Zoological Results based on Material from New Britain, New Guinea, Loyalty Islands and Elsewhere, Collected during the Years 1895, 1896 and 1897," by Dr. Arthur Willey. Part v. An account of the Entozoa, by A. E. Shipley, with 3 plates; of the Nemertina, by R. C. Punnett, with 5 plates; the development of the Robber Crab (*Birgus*), by L. A. Borradaile, with 8 figures in the text; new genera and species of Entomotrachea, by the Rev. T. R. R. Stebbing, F.R.S., with 5 or 6 plates; anatomy of *Neohelia porcellana* (Moseley), by Edith M. Pratt, with 2 plates. The entire work will be completed with the publication of part vi., which will be issued during 1901, and will contain Dr. Willey's monograph on *Nautilus* and other articles, including an account of the Ascidiars, by Prof. W. A. Herdman, F.R.S.; "Reports of the Anthropological Expedition to Torres Straits by the Members of the Expedition," edited by Prof. A. C. Haddon, F.R.S., vol. ii., Physiology and Psychology; "Fauna Hawaiiensis, or the Zoology of the Sandwich Islands," being results of the explorations instituted by the Joint Committee appointed by the Royal Society of London for Promoting Natural Knowledge and the British Association for the Advancement of Science, and carried on with the assistance of those bodies and of the trustees of the Bernice Pauahi Bishop Museum, edited by Dr. David Sharp, F.R.S., Secretary of the Committee; "Zoology," by Prof. E. W. MacBride and A. E. Shipley; "Lectures on Great Physiologists," by Prof. Sir Michael Foster, Sec. R.S.; "Fossil Plants, a Manual for Students of Botany and Geology," by A. C. Seward, F.R.S., vol. ii.; "The Soluble Ferments and Fermentation," by Prof. J. Reynolds Green, F.R.S., new edition; "British Grasses," by Prof. H. Marshall Ward, F.R.S.; "Electricity and Magnetism," by R. T. Glazebrook, F.R.S.; "The Teacher's Manual of School Hygiene," by Dr. E. W. Hope and Edgar Browne; "An Introduction to Logic," by W. E. Johnson; "Euclid, Books I.-III., with Simple Exercises," by R. T. Wright; "An Introduction to Physiology," by W. N. Shaw, F.R.S.; "A Brief History of Geographical Discovery since 1400," by Dr. F. H. Guillemard; "A New Primer of Mechanics," by Prof. L. R. Wilberforce; "A New Primer of Physics," by the same author.

Messrs. Cassell and Co., Ltd., give notice of:—A cheap monthly re-issue of the Century Science Series, edited by Sir Henry Roscoe, F.R.S.; "The Herschels and Modern Astronomy," by Agnes M. Clerke; "Pasteur," by Prof. Percy Frankland, F.R.S., and Mrs. Percy Frankland; "James Clerk Maxwell and Modern Physics," by R. T. Glazebrook, F.R.S.;

"Humphry Davy, Poet and Philosopher," by Dr. T. E. Thorpe, F.R.S.; "Major Rennell, F.R.S., and the Rise of Modern English Geography," by Sir Clements R. Markham, F.R.S.; "Justus Von Liebig: His Life and Work," by W. A. Shennstone, F.R.S.; "Charles Lyell and Modern Geology," by Prof. T. G. Bonney, F.R.S.; "John Dalton and the Rise of Modern Chemistry," by Sir Henry E. Roscoe, F.R.S.; "A Practical Method of Teaching Geography" (England and Wales, part ii.), by J. H. Overton; "Pictorial Practical Fruit Growing," a concise manual giving instructions for the management of every important fruit in cultivation, by W. P. Wright, illustrated; and re-issues of "Familiar Wild Birds," by W. Swainsland, illustrated, and "Cassell's Natural History," illustrated.

Messrs. J. and A. Churchill's list includes:—"A Treatise on Physics," by Prof. A. Gray, F.R.S., in three parts, illustrated, part i., Dynamics and Properties of Matter; "Gynaecological Pathology," by Dr. Charles Hubert Roberts, illustrated; "Diseases of the Thyroid Gland, and their Surgical Treatment," by Dr. James Berry, illustrated; "Handbook of Clinical Medicine for Practitioners and Students," giving an account of the diagnosis, prognosis and treatment of disease, by Dr. Thomas D. Savill, illustrated; and a new edition of "Carpenter's Microscope and its Revelations," edited by Rev. Dr. W. H. Dallinger, F.R.S., illustrated.

In the announcements of the Clarendon Press we observe:—"Micro-Anatomy," by G. Mann; "A Text-Book of Arithmetic," by R. Hargreaves; "Geometrical Exercises," by Prof. A. Larmor; "The Works of George Berkeley," edited by A. C. Fraser, 4 vols.; "The Ethics of Spinoza," by H. H. Joachim.

Messrs. Dent and Co. announce:—"Bird Watching," by E. Selous, illustrated.

Mr. Gustav Fischer (Jena) announces:—"Studien über die Narkose," by Dr. Overton; "Weiteres über Malaria. Immunität und Latenzperiode," by Dr. A. Plehn, illustrated; "Die Parasiten im Krebs und Sarkom," by Dr. Max Schüller, illustrated; "Das Gesetz der Güterconcentration in der individualistischen Rechts- und Wirtschaftsordnung," Erster Halbband: Das Gesetz der Güterconcentration und seine Bedeutung für die Wirtschaftspolitik, by Dr. J. Worms; and a new edition of "Die moderne Weltanschauung und der Mensch," by Dr. B. Vetter.

The announcements of Messrs. C. Griffin and Co., Ltd., include:—"The Construction and Maintenance of Vessels Built of Steel," by Thomas Walton, illustrated; "The Metallurgy of Steel," by F. W. Harbord, illustrated; "Hints on Steam Engine Design and Construction," by Charles Hurst, illustrated; "A Text-Book of Physics," by Profs. J. H. Poynting, F.R.S., and J. J. Thomson, F.R.S.;—"Properties of Matter," illustrated; "Tables and Data for the Use of Analysts, Chemical Manufacturers, and Scientific Chemists," by Prof. J. Castell Evans; "A Dictionary of Dyestuffs: A Compendium of Dyes, Mordants, and other substances employed in Dyeing, Calico-Printing, and Bleaching," by C. Rawson, W. M. Gardner, and Dr. W. F. Laycock; "A Dictionary of Textile Fibres," by William J. Hannan, illustrated; "Sanitary Engineering: A Practical Manual of Town Drainage and Sewage and Refuse Disposal," by Francis Wood, illustrated.

Messrs. J. Hall and Co. give notice of:—"Army Science Papers, being papers in chemistry, physics, physiography and geology, set in the Woolwich, Sandhurst and Militia Literary Examinations, 1890-1896"; "Army Mathematical Papers, being papers in arithmetic, algebra, Euclid, trigonometry and mensuration, set in the Sandhurst and Militia Literary Examinations (Class I.), 1890-1896," with answers by T. A. E. Sanderson.

Mr. W. Heinemann announces:—"A Universal History of Mankind," edited by Dr. Helmolt, vol. i. Introductory Prehistory—America and the Pacific Ocean; "Britain and the North Atlantic," by H. J. Mackinder.

Messrs. Hy. Holt and Co. (New York) will publish "The Anatomy of the Cat," by Profs. Reighard and Jenning, illustrated.

Messrs. Isbister and Co., Ltd., will issue:—"Nature and the Child," by C. B. Scott, illustrated; "Differential and Integral Calculus," with applications, by Prof. E. W. Nichols; "Experimental Chemistry," by Dr. Lyman C. Newell, Teacher's Supplement; Heath's Mathematical Monographs, issued under the general editorship of Prof. Webster Wells:

(1-4) "Famous Geometrical Theorems and Problems and their History," by W. W. Rupert; (5) "On Teaching Geometry," by Florence Milner.

Messrs. Jarrold and Sons announce:—"Letters and Notes on the Natural History of Norfolk, more especially on the Birds and Fishes," from the MSS. of Sir Thomas Browne, M.D. (1605-1682), in the Sloane Collection in the Library of the British Museum, with notes by Thomas Southwell.

Messrs. Crosby Lockwood and Son promise:—"The Engineer's Year-book of Formulae, Rules, Tables, Data and Memoranda in Civil, Mechanical, Electrical, Marine and Mine Engineering," by H. R. Kempe, illustrated; and new editions of "The Art of Soap-making: a Practical Handbook of the Manufacture of Hard and Soft Soaps, Toilet Soaps," by Alexander Watt, illustrated; "Pumps and Pumping, a Handbook for Pump Users, being Notes on Selection, Construction and Management," by M. Powis Bale; "Gas-Engine Handbook, a Manual of Useful Information for the Designer and the Engineer," by E. W. Roberts; "The Construction of Roads and Streets," by the late Henry Law and D. K. Clark.

Messrs. Longmans and Co.'s list includes:—"My Autobiography," by Prof. F. Max Müller; "Researches on Cellulose, 1895-1900," by Cross and Bevan; "Human Personality, and its Survival of Bodily Death," by Frederic W. H. Myers, two vols.; "Dissertations on Leading Philosophical Topics: being Articles Reprinted from *Mind*," by Dr. Alexander Bain; "A Practical Treatise on Mine Surveying," by Arnold Lupton, illustrated; "Pianoforte Tone Production," by Prof. T. Matthey; "Twentieth Century Inventions: a Forecast," by George Sutherland.

Messrs. Macmillan and Co.'s science list comprises:—"The Cambridge Natural History," vol. viii., Amphibia and Reptiles, by Dr. H. Gadow, F.R.S.; "The Scientific Memoirs of Thomas Henry Huxley," edited by Prof. Sir M. Foster, K.C.B., F.R.S., and Prof. E. Ray Lankester, F.R.S., in 4 vols., vol. iii.; "Diseases in Plants," by Prof. H. Marshall Ward, F.R.S.; "The Problem of Conduct, a Study in the Phenomenology of Ethics," by A. E. Taylor; Macmillan's "A Manual of Medicine," edited by Dr. W. H. Allchin, vol. iii.; and new editions of "The Scenery of Scotland viewed in connection with its Physical Geology," by Sir Archibald Geikie, F.R.S., illustrated; "The Methods of Ethics," by the late Prof. Henry Sidgwick, with portrait; "Introduction to Physical Chemistry," by Prof. James Walker; "Flowers and Ferns in their Haunts," by M. O. Wright, illustrated; "Dictionary of Philosophy and Psychology," 3 vols., edited by Prof. J. M. Baldwin; "The Limits of Evolution," by Prof. G. H. Howison; "School Hygiene," by Dr. E. R. Shaw; "The New Basis of Geography," by J. W. Redway; "Ethics, Descriptive and Explanatory," by Prof. S. E. Mezes; "Cyclopedia of American Horticulture," edited by Prof. L. H. Bailey, vol. iii., illustrated; "The Principles of Stock-Breeding," by Prof. W. H. Brewer; "Farm Poultry," by Prof. G. C. Watson, illustrated; "The Principles of Feeding Animals," by W. H. Jordan; "A Laboratory Manual in Physics," by Drs. Crew and Tatnall; "Elementary Electricity and Magnetism," by Profs. D. C. and J. P. Jackson; "Plane and Solid Geometry," by Prof. A. Schultze and F. L. Sevenoak; "Elementary Geometry," by Prof. T. F. Holgate; "The Röntgen Rays in Medicine and Surgery," by Dr. F. H. Williams, illustrated; "Surgical Technique," by Drs. von Esmarch and Kowalzig (translated), illustrated.

Messrs. Methuen and Co. give notice of:—"The Natural History of Selborne," by Gilbert White, edited by Prof. L. C. Miall, F.R.S., and W. Warde Fowler; "Diseases of the Heart," by Dr. E. H. Colbeck, illustrated.

Mr. John Murray's list includes:—"The Native Races of South Africa: their Economic and Social Condition," by the South African Native Races Committee, with maps; "The Life of Gilbert White, of Selborne, based on letters, journals, and other documents in the possession of the family, and not hitherto published," by his Great Grand-Nephew, Rashleigh Holt-White, 2 vols., illustrated; "The Natural History of Religion, based on the Gifford Lectures delivered in Aberdeen in 1889-90 and 1890-91," by Prof. Edward Burnett Tylor, F.R.S., illustrated; "The Book of Ser Marco Polo, the Venetian," translated and edited by the late Colonel Sir Henry Yule, revised throughout in the light of modern discoveries, with a memoir of Colonel Yule," by Prof. Henri Cordier, 2 vols., illustrated; "Heredity," by Prof. J. Arthur Thomson,



illustrated; "The Dawn of Modern Geography, a history of exploration and geographical science from the opening of the Tenth to the middle of the Thirteenth Century, A.D., 900-1250," by C. Raymond Beazley, illustrated; "Dangerous Trades, the historical, social and legal aspects of industrial occupations as affecting public health," by a number of experts, edited by Dr. T. Oliver, illustrated; "The Gypsies of Spain, their Manners, Customs, Religion and Language," by A. Wallis Mills, illustrated.

Mr. J. C. Nimmo promises:—A new edition of "A Handbook of British Birds, showing the distribution of the Resident and Migratory Species in the British Islands, with an Index to the Records of the Rarer Visitors," by J. E. Harting, illustrated.

Mr. David Nutt calls attention to translations of:—"The Realm of the Dead in Ancient Egypt," by Prof. Alfred Wiedemann; "The Tell-el-Amarna Tablets," by Dr. C. Niebuhr; "The Babylonian and Hebrew Genesis," by Prof. H. Zimmern; "The Babylonian Conception of Heaven and Hell," by Dr. Alfred Jeremias; "The Political Development of Babylonia and Assyria," by Prof. H. Winckler.

Messrs. Kegan Paul and Co., Ltd., announce:—"The Origin of Thought," by Rev. D. Nickerson; "Arsenic," by Prof. J. A. Wanklyn.

Messrs. G. P. Putnam's Sons' announcements include:—"The Method of Evolution," a review of the present attitude of science toward the question of the laws and forces which have brought about the origin of species, by H. W. Conn, illustrated; "Care of the Consumptive," a consideration of the scientific use of natural therapeutic agencies in the prevention and cure of consumption, together with a chapter on Colorado as a resort for invalids, by Dr. Charles Fox Gardiner; and a new edition of "Thinking, Feeling, Doing," by E. W. Scripture, illustrated.

In the announcements of Messrs. Lovell Reeve & Co., Ltd., we notice:—"Flora Capensis," the continuation edited by Sir W. T. Thiselton-Dyer, F.R.S., vol. vi., part 1; "Flora of Tropical Africa," the continuation edited by Sir W. T. Thiselton-Dyer, F.R.S., vol. viii., part 1; "Monograph of Membracidae," by George Bowdler Buckton, F.R.S.; "The Hepaticæ of the British Isles," by W. H. Pearson, parts 1 to 17; "The Lepidoptera of the British Islands," by Charles G. Barrett, part 79; "Lepidoptera Indica," by F. Moore, part 49; "Teracolus, a Monograph of the Genus," by E. M. Bowdler Sharpe, part 9.

Messrs. Walter Scott, Ltd., announce:—"The Mediterranean Race," by Prof. Sergi; and new editions of "Hypnotism," by Dr. A. Moll; "The Criminal," by H. Ellis; "The Evolution of Sex," by Profs. P. Geddes and J. A. Thomson; and "The Psychology of Religion," by Prof. Starbuck.

In the list of Messrs. Smith, Elder and Co., we see:—"Surgical Experiences in South Africa, 1899-1900, being mainly a Clinical Study of the Effects of Injuries produced by Bullets of Small Calibre," by George Henry Makins, illustrated.

The S. P. C. K.'s list includes:—"British and Garden Poisonous Plants," by Rev. Prof. Henslow.

Messrs. Swan Sonnenschein and Co., Ltd., announce:—"The Romance of the Heavens," by Prof. A. W. Bickerton, illustrated; "Phenomenology of the Spirit," by G. W. F. Hegel, translated by J. B. Baillie; "The Elements of Embryology, Man and Mammals," by Dr. O. Hertwig, translated and edited by Dr. E. L. Mark and H. W. Rand; "The Specious Present: a Metaphysical Treatise," by Alfred Hodder; "Student's Text Book of Zoology," by Adam Sedgwick, F.R.S., vol. ii., illustrated; "The Wonderful Century Reader," by Dr. Alfred Russel Wallace, F.R.S., illustrated; "Biological Types in the Vegetable Kingdom," by Wilfred Mark Webb; "Ethics," by Prof. W. Wundt, vol. iii.:—"The Principles of Morality and the Sphere of their Validity, translated and edited by Prof. E. B. Titchener; "Physiological Psychology," by Prof. W. Wundt, translated from the fourth German edition by Prof. E. B. Titchener. 2 vols.; "Aristotle's Psychology," translated and edited, &c., by Prof. W. A. Hammond; "History of Contemporary Philosophy," by Dr. Max Heinze, translated by Prof. W. Hammond; "The Life of the Sea Shore," by M. Newbigin, illustrated; "Text-Book of Paleontology for Zoological Students," by T. T. Groom, illustrated; "Mammalia," by Rev. H. A. Macpherson; "Birds' Eggs and Nests," by W. C. J. R. Butterfield, and a new edition of "Evolution and its bearing on Religions," by A. J. Dadson.

The Science announcements of the University Tutorial Press are:—"First Stage Practical Plane and Solid Geometry"; "First Stage Machine Construction and Drawing"; "First Stage Building Construction," by Brysson Cunningham; "Mathematics, First Stage," Edited by Dr. Wm. Briggs; "First Stage Physiology"; "Section One Physiography"; "Key to Mechanics of Solids, First Stage," by F. Rosenberg; "Advanced Hygiene," by A. E. Ikin and R. A. Lyster; "The Tutorial Algebra," part i., Elementary Course, by Rupert Deakin; "The Tutorial Arithmetic," by W. P. Workman; "Deductions in Euclid," by T. W. Edmondson.

Mr. T. Fisher Unwin announces:—"In Tibet and Chinese Turkestan," by Captain i. H. P. Deasy, illustrated; "By Rock and Pool," by Louis Becke.

Mr. P. Wellby gives notice of:—A new edition of "Psychic Philosophy as the Foundation of a Religion of Natural Law," by V. C. Deseritis.

Messrs. Whittaker's list is as follows:—"Electric Traction," by J. H. Rider; "Electric Lighting and Power Distribution," by W. Perren Maycock, vol. ii.; "Galvanic Batteries," by S. R. Bottone; "Telephone System of the British Post Office," by T. E. Herbert.

### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—The subject for the Sedgwick Prize, 1903, is "The Petrology of some Group of British Sedimentary Rocks." A John Lucas Walker Studentship in Pathology, of the value of £200 a year for three years, will shortly be filled up. Candidates, who need not be members of the University, are to apply to Prof. Woodhead, Pathological Laboratory, by April 16.

Mr. A. W. Hill and Mr. C. E. Inglis have been elected to fellowships at King's College. Mr. Hill took first classes in the Natural Sciences Tripos, 1897-98; Mr. Inglis was 22nd Wrangler, 1897, and first class Mechanical Sciences Tripos, 1898.

DR. KOHN, of University College, Liverpool, has been elected Principal of the new Sir John Cass Technical Institute, Aldgate.

The Senate of the University of Aberdeen have decided to confer the honorary degree of LL.D. upon Prof. Virchow, of Berlin, Major Alfred W. Alcock, Superintendent of the Indian Museum, Calcutta, and Professor of Zoology in the Medical College of that city, and Dr. Angus Fraser, of Aberdeen.

THE celebration of the ninth jubilee of the University of Glasgow will begin on June 12, and will occupy three or four days. The details of the programme have not yet been arranged, but we understand that the celebration will probably include a religious service in the Cathedral, public reception of delegates and addresses from Universities and learned societies, a graduation ceremony, conversazione in the Bute Hall, banquet in the City Chambers, garden party in the Botanic Gardens, and a smoking concert. If the weather is fine there will also be an excursion down the Clyde by steamer.

### SCIENTIFIC SERIALS.

*American Journal of Science*, March.—Circular magnetisation and magnetic permeability, by John Trowbridge and E. P. Adams. The experiments of Klemencič upon the intensity of magnetisation produced by an oscillatory current in an iron wire, showed that for a frequency of  $9 \times 10^7$  oscillations per second the permeability of iron to oscillatory currents is a constant. In the present paper the oscillation frequencies are much lower, ranging from 600 to 3000, and in this case the permeability is not a constant, but depends upon the strength of the magnetic field; that is, the iron behaves towards oscillatory currents in much the same manner as it does towards steady currents.—Notes on the geology of parts of the Seminole, Greek, Cherokee, and Osage nations, by C. N. Gould. A line of coal beds extends north and south near Bartlesville, Skiatook, Dawson, Tulsa, Okmulgee, and Henryville. There is no reason to doubt that gas and oil will eventually be found near these coal beds.—Names for the formations of the Ohio coal measures, by C. S. Prossner.—A new American species of Amphicyon, by J. L. Wortman.